

Permitting Requirements for Electrical Power Generation

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Current Permit Requirements, Regulations, and Impacts

- Permit Applicability Thresholds
- Permit Application Forms
- State Permit Requirements
- Federal Permit Requirements
- <http://www.des.state.nh.us/ard/permit.htm>



Permitting Thresholds for Boilers & Turbines

- Permit thresholds based on fuel type and heat input rate
- Evaluated on a per device basis:
 - #2 fuel oil, natural gas, propane: ≥ 10 MMBTU/hr
 - #4 fuel oil: ≥ 4 MMBTU/hr
 - #6 fuel oil, coal, wood, used oil: ≥ 2 MMBTU/hr

Permitting Thresholds for Generators / I.C. Engines

- Permit thresholds based on fuel type and heat input rate, as well as potential to emit - **Aggregate**
- Evaluated on a total heat input basis:
 - Liquid Fuel Oil: ≥ 1.5 MMBTU/hr
 - Natural Gas / LP Gas: ≥ 10 MMBTU/hr, or
 - Has the potential to emit (running at max. load 8,760 hour/year) any single regulated air pollutant > 25 tons per year.

Permit Application Submittal Requirements

- All applicable ARD forms completed
- Copy of property deed, lease or option agreement (unless previously filed with ARD)
- Copies of all calculations
- Facility site plan
- Map with site location clearly noted

Application Forms to be Submitted

- Form ARD-1 General Information All Permit Applications – New, Renew or Modification
 - Need to submit for each application package
- Form ARD-2 Fuel Burning Equipment Registration
 - Need to complete a Form ARD-2 for each fuel burning device to be permitted
 - Form covers generators, boilers, and all other types of fuel burning devices

Calculations

- Show all emissions calculations for device (if using spreadsheet, show sample calculations)
- State calculation method (typically based on USEPA AP-42 emissions factors)
- For calculation help contact DES for guidance - Phone # (603) 271-1370

Site Plan Requirements

- Must be a scale plan
- Plan must show building length, width, and height, and location of all emission points
- Note: all buildings must be shown on plan, not just those with emission points
- Roof profile, stack configuration, raincap, etc.

The Permitting Process

- Administrative Completeness Determination
- Result:
 - Letter of Admin. Completeness to Source; or
 - Letter of Incompleteness to Source Requesting Additional Information (application on hold until additional information is received)
- Upon determination of Admin. Completeness, DES performs technical review (review of emission calculations., identify all applicable regulations, perform air dispersion modeling if necessary and requested)



The Permitting Process (cont'd)

- Perform air dispersion modeling (or review modeling submitted by applicant)
- Draft Temporary Permit, incorporating any restrictions as determined by results of modeling or as needed (usually to opt out of Title V or other regulatory requirements if requested by source)

The Permitting Process (cont'd)

- Upon Completion of Draft Permit:
 - ✓ Publish public notice in newspapers stating intent to issue permit and allowing opportunity for public comments and/or request for public hearing
 - ✓ Send copies of draft permit to source, town/city and EPA for review and comment
 - ✓ Public notice period ends 30 days after publication in newspaper
 - ✓ If no request for hearing is received, DES issues permit after close of public notice period



The Permitting Process (cont'd)

- If request for public hearing is received, a notice of public hearing is published in newspapers (also 30 days)
 - Public hearing conducted to receive comments by interested parties
 - Director to issue final decision on permit



State Regulations for Fuel Burning Devices (Boilers / Turbines / I.C. Engines)

- Visible emission standards (opacity limits)
- Particulate emission standards (limits on pounds of particulate emitted per MMBTU heat input)
- Standards for criteria pollutants from combustion (compliance with standards determined through air dispersion modeling)
 - Particulate Matter (PM)
 - Sulfur Dioxide (SO₂)
 - Oxides of Nitrogen (NO_x)
 - Carbon Monoxide (CO)

Reasonably Available Control Technology Requirements for Nitrogen Oxides (NO_x RACT) (Env-A 1211)

- Purpose: To control / limit NO_x emissions from larger fuel burning devices by setting minimum emission standards.
- Applicability based on maximum heat input rate of fuel burning device(s) **combined at the facility**
 - Boilers: ≥ 50 MMBTU/hr
 - Turbines: ≥ 25 MMBTU/hr
 - I.C. Engines: ≥ 4.5 MMBTU/hr

NOx RACT Requirements (cont'd)

- NOx RACT also applies if Theoretical Potential Potential NOx Emissions (TPE) are > 50 ton/yr
 - note: all RACT requirements for Boilers / Turbines / I.C. Engines still apply if TPE > 50 ton/yr, even if heat input rates for devices are below their respective NOx RACT thresholds

NOx RACT Requirements (cont'd)

- Can opt out of all NOx RACT Requirements by taking a facility-wide permit limit of <50 ton/yr NOx.
- Cannot opt out of NOx RACT if facility-wide NOx Emissions exceeded 50 ton/yr at any time after 12/31/89.

NOx RACT Requirements(cont'd)

- If subject to NOx RACT, required to meet NOx emission standards by performing a stack test every three years
- May require installation of NOx control device if emission standard cannot be met
- **Exceeding 50 ton/yr NOx in Merrimack, Hillsborough, Strafford, or Rockingham Counties would also make facility subject to Title V permitting program (typically requires more stringent NOx emission requirements than NOx RACT)**



Federal Regulations for Fuel Burning Devices

- Boilers > 10 MMBTU/hr: Additional requirements on emission limits for PM and SO₂, more frequent recordkeeping and reporting requirements than State requirements) NSPS 40 CFR 60 Subpart Dc
- Turbines > 10 MMBTU/hr: Sets limits on NO_x and SO₂ emission rates, compliance determined by performing stack test NSPS 40 CFR 60 Subpart TT

Title V Permitting Thresholds

Pollutant	Threshold (ton/yr)
Particulate Matter	100 tons
Oxides of Nitrogen	50 (Merrimack, Hillsborough, Rockingham, Strafford Counties) 100 (all other Counties)
Sulfur Dioxide	100
Non-Exempt Volatile Organic Compounds	50
Carbon Monoxide	100
Hazardous Air Pollutants (HAPs)	10 (any single HAP) 25 (all HAPs combined)



Impacts of Permitting Requirements

- Financial Impacts:

- Emission-based fees (paid annually, \$64.33/ton for 2001 emissions)
- NOx Emissions Reduction Fund fees
- Cost of time needed to keep records and prepare reports
- Cost of control equipment (if required)
- Cost of stack testing (if required)
- Consulting fees (if used)

NOx Emissions Reduction Fund

ENV-A 3700

- New sources
- Existing sources after an 8 year grandfather period
- Permitted sources, not yet installed, after a 6 year grandfather period
 - ✓ Replacement sources receive the balance of the respective grandfather period

NOx Emissions Reduction Fund

ENV-A 3700 (cont'd)

- Report NOx emissions (tons)
- Report energy production (kWh)
- Acquire NOx emissions reductions credits or pay emission based fees in lieu of acquiring credits
 - ✓ First 7 lb NOx/MWh is exempt
 - ✓ NOx emission from non-electric service (e.g. heat) exempt
 - ✓ Higher fees for NOx emissions during ozone season
 - ✓ NOx emission based fees increase over time



NOx Emissions Reduction Fund ENV-A 3700 Exemptions

- Emergency generators
- Start-up or temporary generators
- Portable generators
- Generators with facility-wide NOx emissions less than or equal to 5 tons per year
- Generators in areas where electrical power is not “reasonably or reliably” available

Tips on How to Comply

- Obtain all required Permits prior to installation or modification of a device
- Read Draft Permit (and comment if necessary) prior to final Permit issuance to determine if compliance with all Permit terms and conditions is possible
- Resolve any issues with DES before Permit is issued
- Immediately upon issuance, set up recordkeeping system that ensures compliance with all permit conditions



Recordkeeping and Reporting Requirements



Why do I need to keep records?

- Calculate pollutant emissions
- Demonstrate compliance with emission limitations in permit

What records do I need to keep?

- All Sources:

- ✓ Equipment manufacturer's specifications;
- ✓ Fuel consumption (by device);
- ✓ Hours of operation for each device;
- ✓ Fuel delivery slips (with sulfur content on slip);
- ✓ Regulated air pollutant emissions;
- ✓ Maintenance records on device / control equipment; and
- ✓ Records of Permit Deviations (device or control equipment malfunctions that may/may not result in excess emissions) (excess emissions report within 24 hours)



What records do I need to keep? (continued)

- If applicable:
 - ✓ Oxides of Nitrogen Emissions Statement – (*Env-A 905*) >10 tons/yr
- Additional recordkeeping requirements may be necessary depending on devices, controls, or quantity of emissions

Reporting Requirements for Permitted Sources

- General Reporting Requirements (Env-A 907)
 - ✓ Annual Emissions Report
 - ✓ Combustion & Process Operational Data
 - ✓ Additional Reporting Requirements (Env-A 910)

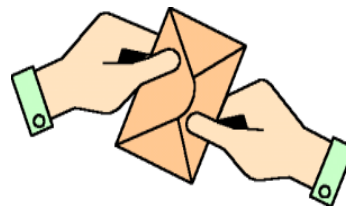


Reporting Requirements for Permitted Sources (continued)

- If Applicable: Oxides of Nitrogen Emissions Statement (Env-A 909) > 10 tons/yr
- Permit Deviation Reporting Requirements (Env-A 911)

When do I need to file my reports?

- Reports due by **April 15th** of each calendar year basis for annual fee due **Oct. 15th**:
 - ✓ Annual Emissions Report (Env-A 704.02 & 907.01(b)(4))
 - ✓ General Combustion Records (Env-A 903.03)
 - ✓ NOx Emissions Statements (Env-A 908 & 909)
 - ✓ State Sources – Permit Deviation Summary Report (Env-A 911)



When do I need to file my reports (continued)?

- Other reporting dates:
 - ✓ Additional permit specific reporting requirements (Env-A 910)
 - ✓ Permit Deviation Requirements:
 - Immediate Reports